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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/876,549	06/07/2001	John SantaLucia JR.	WSU 0192 PUSP	7537

7590 07/09/2004

BROOKS & KUSHMAN P.C.  
22nd Floor  
1000 Town Center  
Southfield, MI 48075

EXAMINER
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KENEDY, ANDREW A

ART UNIT	PAPER NUMBER
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1631

DATE MAILED: 07/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

304.

## Office Action Summary

Application No.

09/876,549

Applicant(s)

SANTALUCIA ET AL.

Examiner

Andrew A. Kenedy

Art Unit

1631

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-60 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-60 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |                                                                                                                                                    |                                                                                         |
|----------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                                                                                   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                                               | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>June 21, 2004</u> . | 6) <input type="checkbox"/> Other: ____.                                                |

### **DETAILED ACTION**

Amendment of Claims 1, 2, 21, 22, 41 and 42 in the reply of May 17, 2004, is acknowledged. Claims 1-60 are pending.

The following rejections and/or objections are either reiterated or newly applied, and constitute the complete set presently being applied to Claims 1-60. The text of those sections of Title 35 U.S.C. not included in this action can be found in the previous Office Action.

#### ***Claim Rejections - 35 USC § 112***

**Claims 1-60 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.**

Applicant has not pointed to basis in the specification for any of the amendments, and no basis is apparent.

Amended Claims 1, 21 and 41 require the newly added limitation "wherein the hybridization thermodynamics of at least one higher order complex is statistically weighted in a process." This is new matter since Applicants only disclose statistical weighting in a numerical process in the instant specification and original claims. This change in scope to include all processes, including those that are non-numerical, was not previously disclosed in the specification or the original claims.

Amended Claims 2, 22, and 42 require the newly added limitation "including optimal and suboptimal energy structures." This is new matter since the terminology "optimal energy structures" and the terminology "suboptimal energy structures" were not disclosed in the specification or the original claims.

Amended Claims 2, 22, and 42 require the newly added limitation of statistically weighting structures "according to their free energy." This is new matter since Applicants only disclose statistical weighting of structures in a "numerical process." Applicants do not disclose statistical weighting of structures "according to their free energy" in the specification or the original claims.

Amended Claims 2, 22, and 42 require the newly added limitation of statistical weighting in an "analytical process." This is new matter since Applicants do not disclose statistical weighting in an analytical process or the terminology "analytical process" in the specification or the original claims.

*Applicant is reminded that deletion of any newly added limitations to the amended claims may result in the reinstatement of previous grounds of rejection.*

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 1-60 are rejected under 35 U.S.C. 102(a) due to disclosure of the invention by the applicants to the public more than one year before the priority date of the instant application.

Applicants disclosed the HYTHER<sup>TM</sup> program at the 217<sup>th</sup> National Meeting of the American Chemical Society (ACS) on March 24, 1999, as documented by applicants' IDS document Peyret et al. ("A new program for the prediction of DNA hybridization thermodynamics." *American Chemical Society*, March 1999, abstract number BIOT-121) and the Examiner's search result on ACS past meetings (website page submitted with the previous Office Action of December 16, 2003). These documents indicate that the method, system, and computer-readable storage medium comprising the HYTHER<sup>TM</sup> computer program were disclosed by the applicants at the ACS National Meeting in the form of a written abstract, research paper, and poster communication.

The provisional application (US 60209778), to which priority is claimed, discloses that the HYTHER<sup>TM</sup> computer program possesses all of the limitations of Claims 1-60 (refer to section 1 of the provisional application, paragraphs entitled "Background" and "Thermodynamic Parameters" (no page numbering by applicants); and sections 2 and 3 of the provisional application (pages numbered 2-17)). Therefore, since HYTHER<sup>TM</sup> was disclosed at the ACS National Meeting as documented above, it appears that all of the features of Applicants' invention as claimed in the instant nonprovisional application were also disclosed at the ACS National Meeting on March 24, 1999.

***Response to Arguments***

Applicants' arguments, see page 11 of the remarks filed on May 17, 2004, with respect to rejection of Claims 1-12, and 18 under 35 U.S.C. 102(a) over Barciszewski & Clark (RNA *Biochemistry and Biotechnology*, 1999, pg. 11-43), Claims 13-17 under 35 U.S.C. 103(a) over Barciszewski & Clark in view of Lane et al. (US 6027884 A), and Claims 19-20 under 35 U.S.C. 103(a) over Barciszewski & Clark and Lane et al. have been fully considered and are found to be persuasive, since it appears that none of the references teach the limitation of statistical weighting of higher order complexes. Therefore these rejections have been withdrawn.

Applicants' arguments, see page 11 of the remarks filed on May 17, 2004, are not found persuasive with respect to the rejection of Claims 1-60 under 35 U.S.C. 102(a) over disclosure of the invention by Applicants to the public more than one year before the priority date of the instant application. Applicants state in their arguments that they have submitted a multi-page copy of the presentation disclosed by the inventors at the ACS March 24, 1999 meeting entitled "A New Program for the Prediction of DNA Hybridization Thermodynamics". Applicants argue that "the computer program referred to in the presentation materials did not provide statistical weighting in a process of at least one higher order complex because this feature was not in the HYTHER<sup>TM</sup> program at that date". However, a copy of this multi-page presentation document is not present in the application and could therefore not be considered as evidence of Applicants' assertion that the feature of statistical weighting of higher order complexes was not a feature of the program at that time and was not therefore not disclosed to the public at the meeting. In the absence of such evidence, the Examiner finds Applicants' argument not persuasive.

***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

***Contact information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew A. Kenedy whose telephone number is (571)-272-0574. The examiner can normally be reached on Monday-Friday 9:00am-5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Woodward can be reached on (571)-272-0722. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

Art Unit: 1631

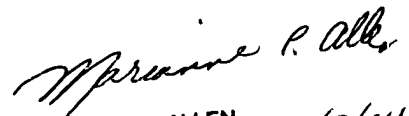
applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to (571) 272-0547.

Patent applicants with problems or questions regarding electronic images that can be viewed in the Patent Application Information Retrieval system (PAIR) can now contact the USPTO's Patent Electronic Business Center (Patent EBC) for assistance. Representatives are available to answer your questions daily from 6 am to midnight (EST). The toll free number is (866) 217-9197. When calling please have your application serial or patent number, the type of document you are having an image problem with, the number of pages and the specific nature of the problem. The Patent Electronic Business Center will notify applicants of the resolution of the problem within 5-7 business days. Applicants can also check PAIR to confirm that the problem has been corrected. The USPTO's Patent Electronic Business Center is a complete service center supporting all patent business on the Internet. The USPTO's PAIR system provides Internet-based access to patent application status and history information. It also enables applicants to view the scanned images of their own application file folder(s) as well as general patent information available to the public.

For all other customer support, please call the USPTO Call Center (UCC) at 800-786-9199.

A.A.K. July 1, 2004

  
MARIANNE P. ALLEN  
PRIMARY EXAMINER  
7/8/04  
Art 1631